



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/502,101

02/15/2005

Giovanni Berti

1110 006 301 0202

8536

37211

7590

10/03/2006

BASCH & NICKERSON LLP  
1777 PENFIELD ROAD  
PENFIELD, NY 14526

EXAMINER

KAO, CHIH CHENG G

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/502,101

Applicant(s)

BERTI, GIOVANNI

Examiner

Chih-Cheng Glen Kao

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: (figs. 1 and 2, #2).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

2. Claims 1-15 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and/or lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following correction(s) may obviate the objection(s): (claim 1, line 18, "said means for moving"; inserting - wherein- before "said means"), (claim 1, lines 18-19; replacing "are capable to move" with - moves- ), (claim 1, line 19, "the position"; replacing "the" with - a- ), (claim 2, lines 1-2,

Art Unit: 2882

“said means for moving said analytical unit”; inserting - -with respect to said base- - after “analytical unit”), (claim 4, line 2, “a x-ray source”; replacing “a” with - -an- -), (claim 5, lines 1-2, “said means for moving said analytical unit”; inserting - -with respect to said base- - after “analytical unit”), (claim 10, line 1, “claim 98”, deleting “8”), (claim 12, 3<sup>rd</sup> to last line, “the position”; replacing “the” with - -a- -), (claim 12, 2<sup>nd</sup> to last line, “the surface”; replacing “the” with - -a- -), and (claim 13, line 3, “the plane”; inserting - -symmetry- - before “plane”).

Claims 2-11 and 13-15 are objected to by virtue of their dependency. For purposes of examination, the claims have been treated as such. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslanov et al. (GB 2198920) in view of Kikuchi et al. (US 6072854).

Regarding claims 1 and 12, Aslanov et al. discloses an apparatus and method comprising positioning a diffractometer (pg. 1, line 4) including a base (fig. 1, #1), an analytical unit supporting a source of a radiation beam (fig. 1, #5) having a collimation axis (pg. 9, line 22) and a radiation beam detector having a reception axis (fig. 1, #6), said collimation and reception axes converging at a centre (fig. 1, at S) of the diffractometer, said centre of the diffractometer being

Art Unit: 2882

fixed (figs. 1-4, at S) with respect to said analytical unit, means for moving (fig. 1, via #4) said analytical unit with respect to said base (fig. 1, #1), means for rotating said source (fig. 1, via #7) and said radiation beam detector (fig. 1, via #8) around said centre (fig. 1, at S) of the diffractometer, so that said collimation axis and said reception axis are kept in an equatorial plane (fig. 1, including points at #5, 6, and S), fixed with respect to said analytical unit (fig. 1), a support and movement structure (fig. 1, #3) supporting said analytical unit, means for moving (fig. 1, via #4) said analytical unit with respect to said support and movement structure (fig. 1, #3) so that said analytical unit can rotate around an equatorial axis (fig. 1, axis defined by #5, 6, and S) contained in said equatorial plane and passing through said centre (fig. 1, at S) of the diffractometer, said means for moving (fig. 1, via #4) said analytical unit with respect to said support and movement structure (fig. 1, #3) permitting the rotation of the equatorial plane (figs. 1-4) around said equatorial axis (fig. 1, axis defined by #5, 6, and S), without said support and movement structure changing its position (figs. 1-4, #3), and positioning the centre of the diffractometer on a point of a surface of an element to be analyzed (fig. 1, S).

However, Aslanov et al. fails to disclose wherein means for moving an analytical unit with respect to a base moves said analytical unit to change a position of an equatorial axis with respect to said base.

Kikuchi et al. teaches wherein means for moving (figs. 1 and 3, double arrow at #46) an analytical unit with respect to a base (fig. 3, #28) moves said analytical unit to change a position of an equatorial axis (fig. 3, axis perpendicular to #49) with respect to said base (fig. 3, #28).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the apparatus and method of Aslanov et al. with the means for

moving of Kikuchi et al., since one would be motivated to make such a modification for better aligning the analytical unit (abstract, lines 10-12) to inspect a region of interest without having to cut-off test pieces (col. 2, lines 1-4) as implied from Kikuchi et al.

4. Regarding claim 2, Aslanov et al. further discloses wherein said means for moving (fig. 1, via #4) said analytical unit with respect to said base (fig. 1, #3) enables rotation of said analytical unit around an axis perpendicular to said equatorial axis (figs. 1-4).

5. Regarding claim 3, Aslanov et al. further discloses wherein said source is a source of electromagnetic radiation (pg. 7, line 13), acoustic radiation, or radiation consisting of particle beams and said detector is a detector of electromagnetic radiation (pg. 7, lines 13-14), acoustic radiation, or radiation consisting of particle beams.

6. Regarding claims 4 and 14, Aslanov et al. further discloses wherein said source is an x-ray source and said detector is an x-ray detector (pg. 7, lines 13-14).

7. Regarding claim 5, Kikuchi et al. further teaches wherein said means for moving (fig. 3, #46) said analytical unit with respect to said base (fig. 3, #28) permit to change a position of said centre of the diffractometer (fig. 3, at #49) by rotation or translation (fig. 3, double arrow at #46) of said analytical unit.

Art Unit: 2882

8. Regarding claim 6, Aslanov et al. further discloses wherein said equatorial axis (fig. 1, axis defined by #5, 6, and S) is perpendicular to a symmetry plane (fig. 1, xy plane) of said analytical unit.

9. Regarding claim 7, Aslanov et al. further discloses wherein said rotation (fig. 1, via #4) around said equatorial axis (fig. 1, axis defined by #5, 6, and S) is along an arc of at least  $10^\circ$  (fig. 4).

10. Regarding claim 11, Aslanov et al. further discloses wherein said analytical unit is formed as a circular arc (fig. 4, arc defined by  $\omega/2\theta$ ).

11. Regarding claim 13, Aslanov et al. further discloses wherein said analytical unit has a symmetry plane (fig. 1, plane parallel to plane defined by #4 via rotation) and the symmetry plane is placed perpendicularly to the surface of the element to be analyzed (fig. 1, S) at the point coincident with the centre of the diffractometer.

12. Regarding claim 15, Aslanov et al. further discloses wherein the element to be analyzed (figs. 1-4, S) is not mechanically linked to the diffractometer.

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aslanov et al. and Kikuchi et al. as applied to claim 3 above, and further in view of Koblenz (US 2843749).

Aslanov et al. as modified above suggests the apparatus as recited above.

Art Unit: 2882

However, Aslanov et al. fails to disclose wherein a detector is a proportional ionization counter.

Koblenz teaches wherein a detector (fig. 4, #5) is a proportional ionization counter (col. 3, lines 28-30).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the apparatus of Aslanov et al. as modified above with the counter of Koblenz, since one would have been motivated to make such a modification for improving the signal-to-noise ratio (col. 2, lines 3-9) as implied by Koblenz.

14. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslanov et al. and Kikuchi et al. as applied to claim 1 above, and further in view of Fink et al. (US 5359640).

15. Regarding claim 9, Aslanov et al. as modified above suggests the apparatus as recited above.

However, Aslanov et al. fails to disclose a pointing device placed on an analytical unit for positioning said analytical unit with respect to an element to be analyzed.

Fink et al. teaches a pointing device (fig. 1, A) placed on an analytical unit (fig. 1) for positioning the analytical unit with respect to an element (title and fig. 1, P) to be analyzed.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the apparatus of Aslanov et al. as modified above with the pointing device of Fink et al., since one would have been motivated to make such a modification



Art Unit: 2882

for providing more reliable positioning of the focal spot of the x-ray on the sample (col. 1, lines 46-49) as implied from Fink et al.

16. Regarding claim 10, Aslanov et al. as modified above suggests the apparatus as recited above. Fink et al. further teaches wherein said pointing device comprises a laser (col. 2, line 56) and a telecamera (col. 2, line 63).

However, Aslanov et al. fails to disclose two lasers.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the apparatus of Aslanov et al. as modified above with two lasers, since mere duplication of the essential working parts of a device involves only routine skill in the art. One would have been motivated to make such a modification for more accurate positioning.

### ***Response to Arguments***

17. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments filed July 24, 2006, have been fully considered but they are not persuasive.

Regarding claim 10, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., dual-laser configuration indicating the correct positioning based upon the overlap of the two spots projected by the lasers along with their shape) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification

Art Unit: 2882

are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In other words, although the dual-laser configuration with overlapping spots is not a mere duplication of the essential working parts of a device, the claim does not recite such features. On the other hand, the claim recitation of just two lasers is such an obvious modification of mere duplication. Therefore, applicant's arguments are not persuasive, and the prior art and respective rejection still applies.

### ***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2882

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



gk



EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER